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L4: Entry 16 of 59 File: USPT Feb 6, 2001

DOCUMENT-IDENTIFIER: US 6183968 B1
TITLE: Composition for the detection of genes encoding receptors and proteins associated with cell proliferation

BSPR:
DNA-based arrays can provide a simple way to explore the expression of a single polymorphic gene or a large number of genes. When the expression of a single gene is explored, DNA-based arrays are employed to detect the expression of specific gene variants. For example, a p53 tumor suppressor gene array is used to determine whether individuals are carrying mutations that predispose them to cancer. The array has over 50,000 DNA probes to analyze more than 400 distinct mutations of p53. A cytochrome p450 gene array is useful to determine whether individuals have one of a number of specific mutations that could result in increased drug metabolism, drug resistance, or drug toxicity.

BSPR:
Hybridization reactions can be performed in absolute or differential hybridization formats. In the absolute hybridization format, target polynucleotides from one sample are hybridized to the probes in a microarray format, and signals detected after hybridization complex formation correlate to target polynucleotide levels in a sample. In the differential hybridization format, the differential expression of a set of genes in two biological samples is analyzed. For differential hybridization, target polynucleotides from both biological samples are prepared and labeled with different labeling moieties. A mixture of the two labeled target polynucleotides is added to a microarray. The microarray is then examined under conditions in which the emissions from the two different labels are individually detectable. Probes in the microarray that are hybridized to substantially equal numbers of target polynucleotides derived from both biological samples give a distinct combined fluorescence (Shalon et al. PCT publication WO95/35505). In a preferred embodiment, the labels are fluorescent labels with distinguishable emission spectra, such as a lissamine conjugated nucleotide analog and a fluorescein conjugated nucleotide analog. In another embodiment, C3/C5 fluorophores (Amersham Pharmacia Biotech) are employed.

DETL:
SEQ ID NO:88 1651564 PR00484C PHEROMONE ODORANT REC 1182 1272 2 ORF for SHL2 [Human herpesvirus 6] g221458 1 receptor SEQ ID NO:89 1652112 PR00576F OPSIN RH1/RH2 SIGNAT 1259 1348 1 ORF YNL337w [S. cerevisiae] g1302465 0.9992 receptor SEQ ID NO:90 1653770 PR00643C G10D ORPHAN RECEPTOR 1237 1286 3 unknown protein [H. sapiens] g119431 1.90E-13 receptor SEQ ID NO:91 1693426 PR00497E NEUTROPHIL CYTOSOL FACT 1397 1289 2 Sim. to D. melanogaster cadherin g1665821 9.90E-41 receptor SEQ ID NO:92 1700601 PR00578C LATERAL EYE OPSIN SIG 1240 1102 1 prion protein {intervening sequence g1911644 0.999999 receptor SEQ ID NO:93 1729463 PR00490F SECRETIN RECEPTOR 1167 1239 2 carbamyl phosphate synthetase g203576 1 receptor SEQ ID NO:94 1730680 PR00552B ADENOSINE A1 RECEPTOR 1135 1353 1 trehalose-6-phosphate synthase g535003 0.68 receptor SEQ ID NO:95 1731419 PR00581E PROSTANOID EP2 RECE 1293 1195 5 small proline-rich protein [O. aries] g1296429 0.0022 receptor SEQ ID NO:96 1751509 PR00652F 5-HYDROXYTRYPTAMINE 7 1283 1488 1 methyltransferase [Archaeoglobus ful g2650202 0.9991 receptor SEQ ID NO:97 1752114 PR00553F ADENOSINE A2A RECEPTOR 1233 1307 1 URF (58 AA) [Thermoproteus tenax pl vir g62163 0.8 receptor SEQ ID

Polymerase chain reaction-allele-specific-oligonucleotide hybridization (PCR-ASO) used for detection of CYP1A1, **CYP3A4**, CYP2D6 and NAT2 mutant/polymorphic alleles

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PATENT ASSIGNEE(S): Hopital Sainte-Justine, Can.
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CODEN: PIXXD2
DOCUMENT TYPE: Patent
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FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000024926	A1	20000504	WO 1999-CA982	19991022
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6183963	B1	20010206	US 1998-177359	19981023
AU 9963222	A1	20000515	AU 1999-63222	19991022
EP 1123415	A1	20010816	EP 1999-950416	19991022
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRIORITY APPLN. INFO.: US 1998-177359 A 19981023
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AB The present invention relates to the detection of genetic polymorphisms (**variants** and/or mutations) in genes encoding the xenobiotic metabolizing enzymes CYP1A1, CYP2D6, **CYP3A4**, and NAT2. In particular the invention presents the use of polymerase chain reaction (PCR) to amplify the CYP1A1, CYP2D6, **CYP3A4**, and NAT2 genes followed by Southern blot hybridization using allele-specific-oligonucleotide (ASO) **probes**. The invention provides sequences of: (1) PCR primers used to amplify CYP1A1, **CYP3A4**, CYP2D6 and NAT2 mutant alleles, and (2) **probes** used for detecting wild-type and mutant alleles of CYP1A1, **CYP3A4**, CYP2D6 and NAT2 genes. The invention also presents the various polymorphisms/mutations (point, insertion and deletion) found in the CYP1A1, **CYP3A4**, CYP2D6 and NAT2 genes using the described method. The invention furthers presents the use of these primers and **probes** in diagnostic assays. In the example section, the invention discussed the use of the PCR-ASO system for characterizing the CYP1A1, **CYP3A4**, CYP2D6 and NAT2 gene alleles, and comments on whether the mutations/polymorphisms obsd. in certain alleles result in changes to the amino acid sequence of the enzymes.

REFERENCE COUNT: 6
REFERENCE(S):
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(6) Otsuka Pharma Co Ltd; EP 0759476 A 1997 CAPLUS
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